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HAYN & another's COMPLETE SPECIFICATION.

SHEET 1.

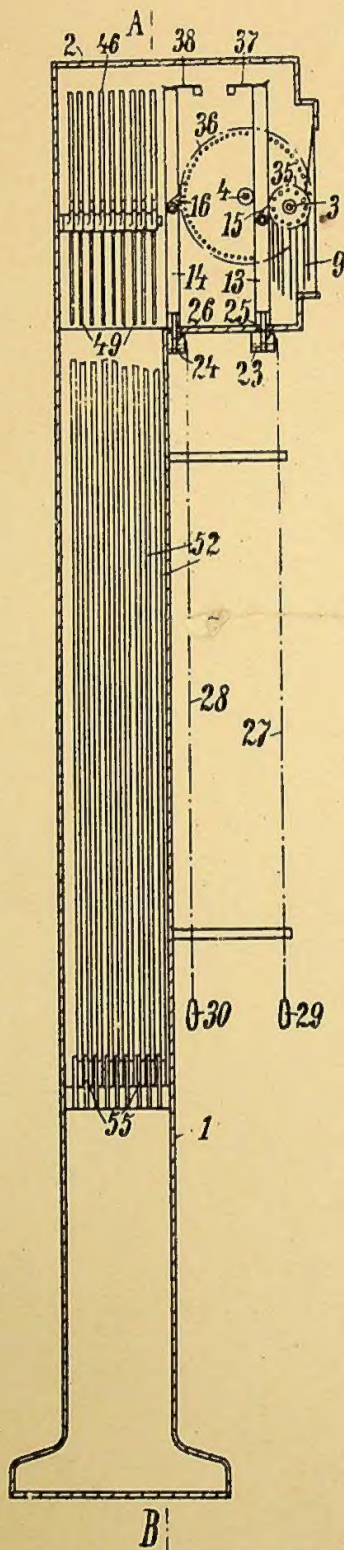


Fig. 1

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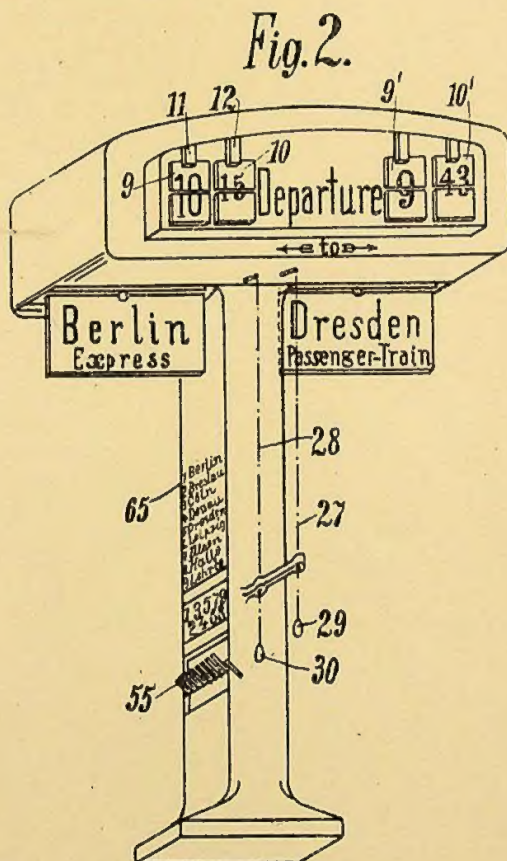


Fig. 2.

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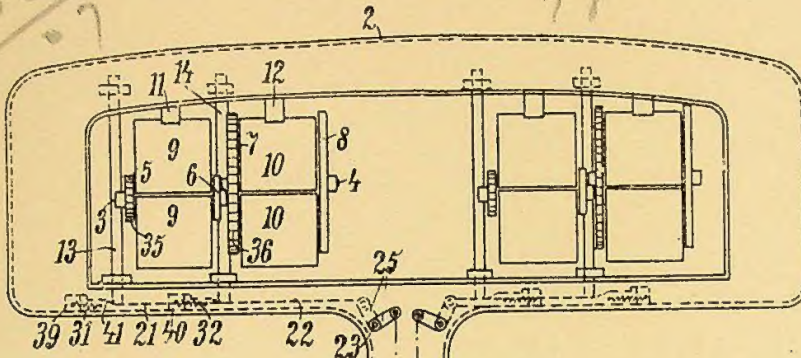


Fig. 3.

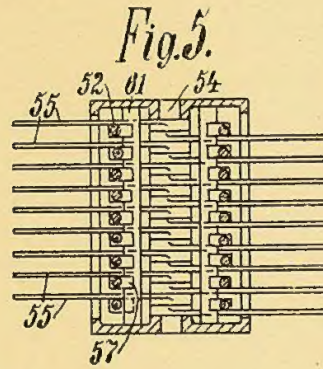


Fig. 5.

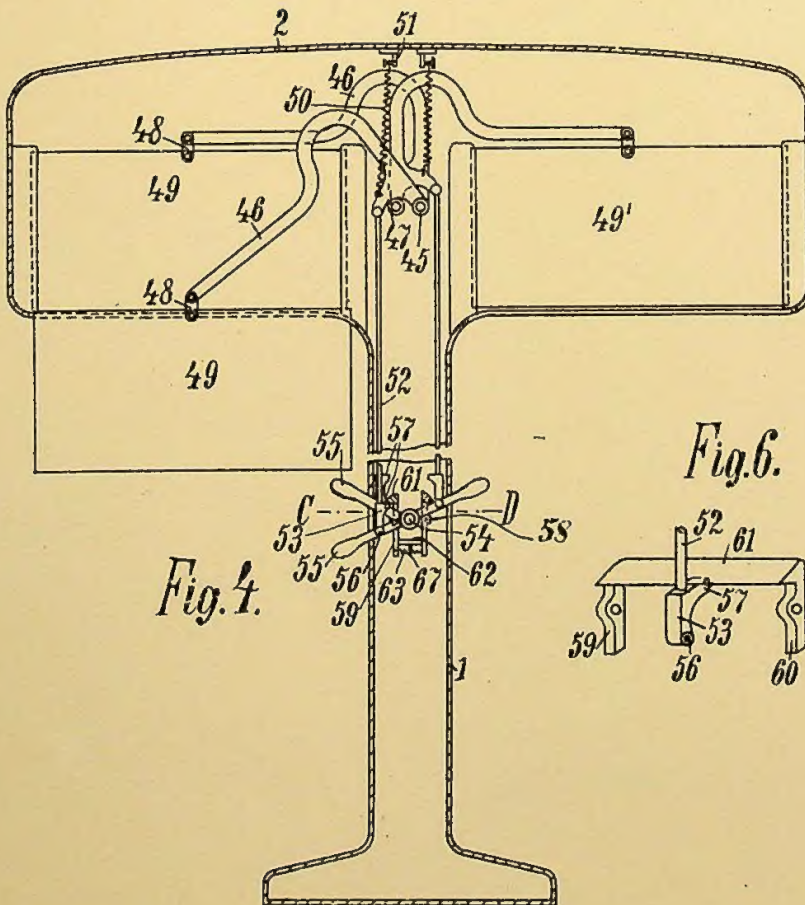


Fig. 4.

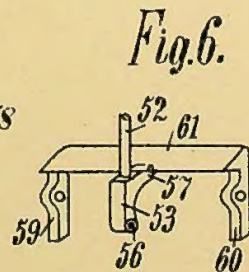
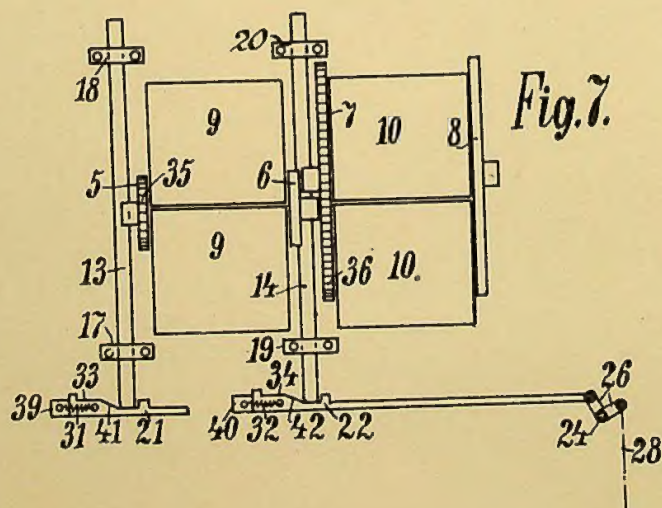
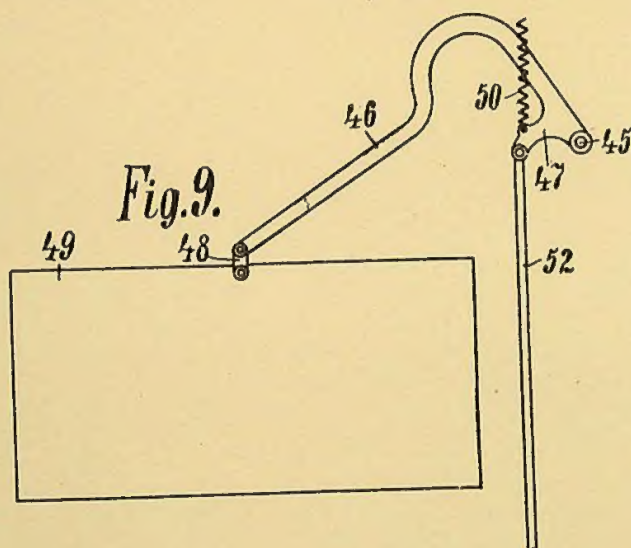
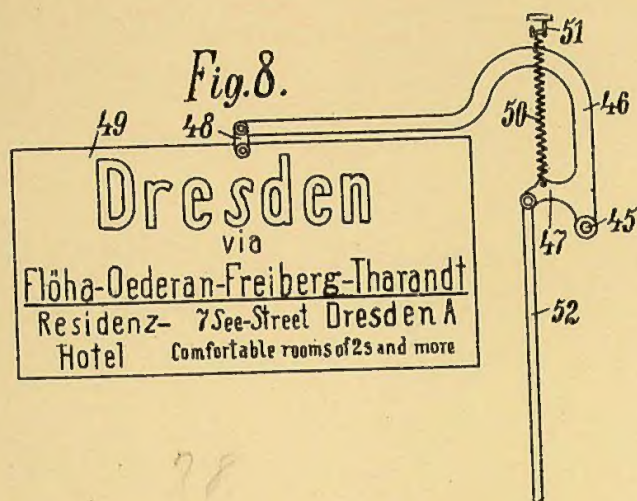


Fig. 6.



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Duplicate.

Date of Application, 7th May, 1907—Accepted, 12th Dec., 1907

COMPLETE SPECIFICATION.

Improvements in Devices for Indicating Routes and Times of
Departure and the like at Railway Stations and the like

We, AUGUST FRIEDRICH HAYN and JOHANN AUGUST WILHELM LEILICH, Manufacturers, both of Lutherstr. 66, Chemnitz, Saxony, Germany, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

The subject-matter of the present application is an apparatus for indicating on platforms, in waiting rooms, station halls and the like routes and the times of departure of trains with two devices of which the one is determined for indicating the routes and the other for showing the times of departure in such a way that both the routes and also the times of departure can be simultaneously exhibited. The new apparatus is characterised by the revolvably supported two-armed levers, on the longer arms of which the plates for showing the routes are suspended, while the other arms are connected each with a spring and a rod. The nose on each of said rods snaps under a spring-influenced detent-bar as soon as the rod is pulled down against the tension of its spring. Thereby the plate provided with the route is exhibited. The new feature of the present invention further consists of two shifting bars having raised portions which pass under rods and consequently raise the latter. Said rods are provided with pivoted pawls engaging the teeth of two disks so that when said raised parts pass under the rods the latter are raised and by means of the pawls the disks with the teeth turn together with the shafts through the space of one tooth.

By virtue of the raised portions by means of which the shifting bars operate against the rods there is obtained the advantage that the force with which the shifting bars operate on said rods is independent of the force with which the bars are shifted by hand. Therefore if the bars are at one time shifted at a quick and at another time at a slow rate said rods will influence the teeth of said disks by means of their pawls in the same manner, that is in such a manner that said disks only turn through the space of one tooth.

The invention is represented in the accompanying drawings.

Fig. 1 is a cross-section through a device according to the present invention.

Fig. 2 illustrates the same in perspective and to a somewhat smaller scale.

Fig. 3 is a front elevation of the device the front wall having been removed, and

Fig. 4 is a cross section through the apparatus on the line A—B of Fig. 1.

Fig. 5 is a section to a larger scale on the line C—D of Fig. 4.

Figs. 6 & 7 show on a larger scale details of the device in perspective and in side elevation respectively.

Figs. 8 & 9 show in side elevation those means by which the actuation of the indicating plates provided with the routes is effected, Fig. 8 showing a plate in its raised position and Fig. 9 in its lowered position.

As is evident from the drawing 1 is a hollow standard which terminates above in the casing 2. The casing 2 contains in the first place the contrivance

[Price 8d.]

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for indicating the times of departure and in the second place the contrivance for indicating the various routes.

The device for causing the times of departure to appear consists by way of example of the two shafts 3, 4 (Fig. 1) revolubly supported in the casing 2. On each of the shafts 3, 4 two discs are mounted, namely, the discs 5, 6 on the shaft 3 and the discs 7, 8 on the shaft 4 (see Figs. 3 & 7), the discs 5 & 7 each being provided with teeth 35, 36 respectively. On the discs 5, 6 the twelve plates 9 which are adapted to be turned down are suspended and on the discs 7, 8 are suspended sixty-one plates 10 which are also adapted to be turned down. The twelve indicating plates 9 permit the various hours to be exhibited one after another while the sixty-one plates 10 are determined for giving the minutes including zero minutes. For the set of plates 9 and for the set of plates 10 abutments 11 and 12 respectively are provided in such a way that each plate shortly before being turned down rests against the abutment corresponding to its set. At 17, 18 and 19, 20 the rods 13, 14 respectively are guided on which rods the pawls 15 and 16 shown only in Fig. 1 are pivotted. The latter engage in the teeth 35 or 36. The rods 13, 14 rest with their lower ends on the bars 21, 22 respectively and are held in this lower position by means of the springs 37, 38 respectively. The bars 21, 22 are each connected with an arm of the angle levers 25, 26 respectively which are revolubly supported at 23, 24. The other arm of each angle lever is connected with one of the cords 27 or 28 which cords are provided with handles 29, 30 at their ends. The bars 21, 22 are each provided with a raised portion 33 or 34. The springs 31, and 32 which are fastened at their one end to the stops 39, 40 respectively and at their other end to the bars 21, 22 respectively have the tendency to draw the bars 21, 22 always to the left until they strike against the stops 39, 40 respectively, that is, until they occupy the position indicated in Fig. 7. Between the raised portions 33 and 34 and the lower parts of the bars 21, 22 there are steeply inclined planes 41, 42 respectively.

The mode of operation of the apparatus serving to exhibit the times of departure is consequently as follows:

When the hour for the time of departure of the train is to be exhibited the handle 29 is pulled. By this means through the instrumentality of the cord 27 the bar 21 is shifted to the right in opposition to the tension of the spring 31 so that the raised portion 33 passes under the rod 13 and consequently raises the latter. The raising of the rod 13 has as a result that the pawl 15 turns the teeth 35 on the disc 5 mounted on the shaft 3 through the space of one tooth and consequently the plate 9 resting against the abutment 11 falls down so that the hour on the next following plate is visible to the eye. As soon as the handle 29 is let go the bar 21 is brought back by the spring 31 into its former position against the stop 39, the rod 13 likewise returning under the influence of the spring 37 into its former position. After each time that the handle 29 is pulled and let go one of the twelve plates 9 falls down. Consequently the handle 29 must be pulled repeatedly until the correct hour appears on the plates 9.

In order to exhibit the minutes the handle 30 is pulled, by means of which through the instrumentality of the cord 28 the bar 22 is shifted to the right in opposition to the tension of the spring 32. As by this means the raised part 34 passes under the bar 14 the latter is raised and by means of the pawl 16 the disc 7 with the teeth 36 turns together with the shaft 4 through the space of one tooth. In this manner that particular plate of the set of plates 10 which was resting against the abutment 12 is caused to turn down. After releasing the handle 30 the bar 22 in consequence of the action of the spring 32 passes back into its former position whereupon the rod 14 is likewise pressed down into its former position by means of the spring 38. By pulling the handle 30 several times and releasing it any desired number of the plates 10 may be caused to turn down until the correct minutes appear.

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The apparatus for exhibiting the routes is arranged as follows:—

In the back part of the casing 2 the axle 45 is fastened. Upon said axle a series of two-armed levers 46, 47 is revolubly supported. On the arm 46 of each double armed lever a plate 49 for exhibiting the routes is suspended by means of the link 48, said plate being guided in the casing 2. A spring 50 is attached to the arm 47 of each lever the other end of said spring being suspended at 51 in the casing 2. Each of the lever-arms 47 is connected moreover with a rod 52. Each rod 52 is provided below with a piece 53 which is pivotted at 56 on one of the levers 55 which are revolubly supported on the axle 54. Each piece 53 is provided with a nose 57. On the axle 58 two levers 59, 60 are revolubly supported which levers are connected together by a detent-bar 61. Below the shaft 54 an abutment 62 is provided against which the lower ends of the levers 59, 60 rest. A spring 63 is attached at 67 to the abutment 62, the other end of said spring engaging the lever 59. Each lever 55 is provided with a numeral. Above the levers 55 the various lever-numerals together with the routes corresponding thereto are provided at 65 (Fig. 2).

The mode of operation of this apparatus is as follows:—

When a plate 49 provided with a certain route is to be exhibited, that particular lever 55 which is provided with the corresponding numeral is turned down until its nose 57 (Fig. 6) snaps under the detent-bar 61 or the levers 59, 60. By this means the rod 52 is likewise moved downwards and the two-armed lever 46, 47 is brought from its upper position as shown in Fig. 8 into its lower position as shown in Fig. 9. If after this, another lever 55 is to be pressed down, its nose 57 will press against the detent-bar 61. The result of this is that the levers 59, 60 are moved in opposition to the tension of the spring 63 away from the abutment 62 and the detent-bar 61 releases the nose 57 which was previously held, so that the indicating plate previously lowered is withdrawn by the spring 50 back into its upper position. On pressing down the lever 55 still further the nose 57 connected with the rod 52 of the new plate will snap under the detent-bar 61 and be held fast as long as the second new plate is to remain exhibited.

The indicating plates 49 may be provided with the designations of the routes and of the kinds of trains (express train, *etc.*) and in addition to these in the case of apparatus intended for waiting-rooms and station-halls the plates may also be provided with advertisements of any kind and with railway notices. As can be seen from Figs. 2 & 3 the whole apparatus may be so constructed that at each side of the column 1 a plate provided with routes can be drawn down and the corresponding times of departure be given over the same, that is, in addition to the plates 49, plates 49¹ as shown in Fig. 4 may be arranged and in addition to the indicating plates 9, 10, the indicating plates 9¹, 10¹ which are adapted to be actuated by hand in a manner similar to that above indicated. The apparatus described may also be so constructed that not only on the one side but also on the other side routes are indicated and the times of departure given, no departure being thereby made from the present invention.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

Apparatus for indicating routes and times of departure of trains with two devices of which the one is determined for indicating the routes and the other for showing the times of departure in such a way that both the routes and also the times of departure can be simultaneously exhibited, characterised by the revolubly supported two-armed levers (such as 46, 47), on the longer arms (46) of which the plates (such as 49) for showing the routes are suspended, while the other arms (47) are connected each with a spring (such as 50) and a rod (such as 52), the nose (such as 57) on each of which rods snaps under a spring-influenced detent-bar (such as 61) as soon as the rod (52) is pulled down

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against the tension of its spring whereby the plate (49) provided with the route is exhibited and characterised by the shifting bars (21, 22) said bars having raised portions (33, 34) which pass under the rods (13, 14) and consequently raise the latter said rods (13, 14) being provided with pivoted pawls (15 and 16) respectively, said pawls engaging the teeth (35 or 36) so that when 5 the raised parts (33, 34) pass under the rods (13, 14) the latter are raised and by means of the pawls (15, 16) the disks (5, 7) with the teeth (35, 36) turn together with the shafts through the space of one tooth, in such a manner that that particular plate of the set of plates 9 or that particular plate of the set of plates 10 which was pressing against the abutment 11 or 12 respectively 10 is caused to turn down.

Dated this 7th day of November 1907.

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